



SEQUENCE LISTING

<110> American Cyanamid Company

<120> Vaccines Containing Recombinant Pilin Against Neisseria gonorrhoeae or Neisseria meningitidis

<130> 33377-00/PCT

<160> 24

<170> PatentIn version 3.1

<210> 1

<211> 504

<212> DNA

<213> Artificial

<220>

<221> CDS

<222> (1)..(501)

<223> Chimeric of Neisseria meningitidis Class I and Neisseria gonorrhoeae

<400> 1

atg	gat	acc	ctt	caa	aaa	ggc	ttt	acc	ctt	atc	gag	ctg	atg	att	gtg	48
Met	Asp	Thr	Leu	Gln	Lys	Gly	Phe	Thr	Leu	Ile	Glu	Leu	Met	Ile	Val	
1				5					10					15		

atc	gcc	atc	gtc	ggc	att	ttg	gcg	gca	gtc	gcc	ctt	ccc	gcc	tac	caa	96
Ile	Ala	Ile	Val	Gly	Ile	Leu	Ala	Ala	Val	Ala	Leu	Pro	Ala	Tyr	Gln	
			20				25						30			

gac	tac	acc	gcc	cgc	gcg	caa	gtt	tcc	gaa	gcc	atc	ctt	ttg	gcc	gaa	144
Asp	Tyr	Thr	Ala	Arg	Ala	Gln	Val	Ser	Glu	Ala	Ile	Leu	Leu	Ala	Glu	
		35				40						45				

ggc	caa	aaa	tca	gcc	gtt	acc	gag	tat	tac	ctg	aat	cac	ggc	gaa	tgg	192
Gly	Gln	Lys	Ser	Ala	Val	Thr	Glu	Tyr	Tyr	Leu	Asn	His	Gly	Glu	Trp	
	50					55					60					

ccc	ggc	aac	aac	act	tct	gcc	ggc	gtg	gca	tct	tct	tca	aca	atc	aaa	240
Pro	Gly	Asn	Asn	Thr	Ser	Ala	Gly	Val	Ala	Ser	Ser	Ser	Thr	Ile	Lys	
65					70				75						80	

ggc	aaa	tat	gtt	aag	gaa	gtt	aca	gtc	gca	aac	ggc	gtc	att	acc	gcc	288
Gly	Lys	Tyr	Val	Lys	Glu	Val	Thr	Val	Ala	Asn	Gly	Val	Ile	Thr	Ala	
			85						90					95		

aca	atg	ctt	tca	agc	ggc	gta	aac	aaa	gaa	atc	caa	ggc	aaa	aaa	ctc	336
Thr	Met	Leu	Ser	Ser	Gly	Val	Asn	Lys	Glu	Ile	Gln	Gly	Lys	Lys	Leu	
			100				105						110			

tcc	ctg	tgg	gcc	aag	cgt	caa	gac	ggc	tcg	gta	aaa	tgg	ttc	tgc	gga	384
Ser	Leu	Trp	Ala	Lys	Arg	Gln	Asp	Gly	Ser	Val	Lys	Trp	Phe	Cys	Gly	
		115				120						125				

cag	ccg	gtt	acg	cgc	acc	gac	gcc	aaa	gcc	gac	acc	gtc	gcc	gcc	gcc	432
Gln	Pro	Val	Thr	Arg	Thr	Asp	Ala	Lys	Ala	Asp	Thr	Val	Ala	Ala	Ala	
	130					135					140					

gcc aag acc gcc gac aac atc aac acc aag cac ctg ccg tca acc tgc 480
 Ala Lys Thr Ala Asp Asn Ile Asn Thr Lys His Leu Pro Ser Thr Cys
 145 150 155 160

cgc gac gca agt gat gcc agc taa 504
 Arg Asp Ala Ser Asp Ala Ser
 165

<210> 2
 <211> 167
 <212> PRT
 <213> Artificial
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<221> amino acid
 <222> (1)..(167)
 <223> Chimeric of Neisseria meningitidis Class I and Neisseria gonorrhoeae

<400> 2

Met Asp Thr Leu Gln Lys Gly Phe Thr Leu Ile Glu Leu Met Ile Val
 1 5 10 15

Ile Ala Ile Val Gly Ile Leu Ala Ala Val Ala Leu Pro Ala Tyr Gln
 20 25 30

Asp Tyr Thr Ala Arg Ala Gln Val Ser Glu Ala Ile Leu Leu Ala Glu
 35 40 45

Gly Gln Lys Ser Ala Val Thr Glu Tyr Tyr Leu Asn His Gly Glu Trp
 50 55 60

Pro Gly Asn Asn Thr Ser Ala Gly Val Ala Ser Ser Ser Thr Ile Lys
 65 70 75 80

Gly Lys Tyr Val Lys Glu Val Thr Val Ala Asn Gly Val Ile Thr Ala
 85 90 95

Thr Met Leu Ser Ser Gly Val Asn Lys Glu Ile Gln Gly Lys Lys Leu
 100 105 110

Ser Leu Trp Ala Lys Arg Gln Asp Gly Ser Val Lys Trp Phe Cys Gly
 115 120 125

Gln Pro Val Thr Arg Thr Asp Ala Lys Ala Asp Thr Val Ala Ala Ala
 130 135 140

Ala Lys Thr Ala Asp Asn Ile Asn Thr Lys His Leu Pro Ser Thr Cys
 145 150 155 160

Arg Asp Ala Ser Asp Ala Ser
165

<210> 3
<211> 510
<212> DNA
<213> Artificial

<220>
<221> CDS
<222> (1)..(507)
<223> Chimeric of Neisseria meningitidis Class II and Neisseria gonorrhoeae

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Met Glu Ala Ile Gln Lys Gly Phe Thr Leu Ile Glu Leu Met Ile Val	
1 5 10 15	
atc gcc atc gtc ggt atc ttg gca gcc gtc gcc ctg ccc gca tac caa	96
Ile Ala Ile Val Gly Ile Leu Ala Ala Val Ala Leu Pro Ala Tyr Gln	
20 25 30	
gac tac acc gcg cgc gcc caa atg tcc gaa gcc ctg act ttg gca gaa	144
Asp Tyr Thr Ala Arg Ala Gln Met Ser Glu Ala Leu Thr Leu Ala Glu	
35 40 45	
ggt caa aaa tcc gca gtg atc gag tat tat tcc gac aac ggc aca ttc	192
Gly Gln Lys Ser Ala Val Ile Glu Tyr Tyr Ser Asp Asn Gly Thr Phe	
50 55 60	
ccg aac agc aat act tcc gca ggt att gct gcc tct aac gag att aaa	240
Pro Asn Ser Asn Thr Ser Ala Gly Ile Ala Ala Ser Asn Glu Ile Lys	
65 70 75 80	
ggt aag tat gtg gca tcg gtt aag gtt gaa ggt aat gcc tct gtt gct	288
Gly Lys Tyr Val Ala Ser Val Lys Val Glu Gly Asn Ala Ser Val Ala	
85 90 95	
tct att acc gct acc atg aac tct agt aat gtg aat aag gac atc aaa	336
Ser Ile Thr Ala Thr Met Asn Ser Ser Asn Val Asn Lys Asp Ile Lys	
100 105 110	
ggt aaa acc ttg gta ctc gtc ggc aaa caa aac tcc ggt tcg gta aaa	384
Gly Lys Thr Leu Val Leu Val Gly Lys Gln Asn Ser Gly Ser Val Lys	
115 120 125	
tgg ttc tgc gga cag ccg gtt acg cgc gac aac gcc gac aac gac gac	432
Trp Phe Cys Gly Gln Pro Val Thr Arg Asp Asn Ala Asp Asn Asp Asp	
130 135 140	
gtc aaa gac gcc ggc aac aac ggc atc gaa acc aag cac ctg ccg tca	480
Val Lys Asp Ala Gly Asn Asn Gly Ile Glu Thr Lys His Leu Pro Ser	
145 150 155 160	
acc tgc cgc gat acg tca tct gat gcc aaa	510

Thr Cys Arg Asp Thr Ser Ser Asp Ala
165

<210> 4
<211> 169
<212> PRT
<213> Artificial

<220>
<221> amino acid
<222> (1)..(169)
<223> Chimeric of Neisseria meningitidis Class II and Neisseria gonorrhoeae

<400> 4

Met Glu Ala Ile Gln Lys Gly Phe Thr Leu Ile Glu Leu Met Ile Val
1 5 10 15

Ile Ala Ile Val Gly Ile Leu Ala Ala Val Ala Leu Pro Ala Tyr Gln
20 25 30

Asp Tyr Thr Ala Arg Ala Gln Met Ser Glu Ala Leu Thr Leu Ala Glu
35 40 45

Gly Gln Lys Ser Ala Val Ile Glu Tyr Tyr Ser Asp Asn Gly Thr Phe
50 55 60

Pro Asn Ser Asn Thr Ser Ala Gly Ile Ala Ala Ser Asn Glu Ile Lys
65 70 75 80

Gly Lys Tyr Val Ala Ser Val Lys Val Glu Gly Asn Ala Ser Val Ala
85 90 95

Ser Ile Thr Ala Thr Met Asn Ser Ser Asn Val Asn Lys Asp Ile Lys
100 105 110

Gly Lys Thr Leu Val Leu Val Gly Lys Gln Asn Ser Gly Ser Val Lys
115 120 125

Trp Phe Cys Gly Gln Pro Val Thr Arg Asp Asn Ala Asp Asn Asp Asp
130 135 140

Val Lys Asp Ala Gly Asn Asn Gly Ile Glu Thr Lys His Leu Pro Ser
145 150 155 160

Thr Cys Arg Asp Thr Ser Ser Asp Ala
165

<210> 5
 <211> 30
 <212> DNA
 <213> *Neisseria gonorrhoeae*

 <400> 5
 cccgcgccca tggataccct tcaaaaaggc 30

 <210> 6
 <211> 30
 <212> DNA
 <213> *Neisseria gonorrhoeae*

 <400> 6
 gggcctggat ccgtgggaaa tcacttaccg 30

 <210> 7
 <211> 29
 <212> DNA
 <213> *Neisseria gonorrhoeae*

 <400> 7
 ggctctagac tgtcagacca agtttactc 29

 <210> 8
 <211> 27
 <212> DNA
 <213> *Neisseria gonorrhoeae*

 <400> 8
 ggctctagat tgaagcattt atcaggg 27

 <210> 9
 <211> 28
 <212> DNA
 <213> *Neisseria gonorrhoeae*

 <400> 9
 ggctctagat aaacagtaat acaagggg 28

 <210> 10
 <211> 28
 <212> DNA
 <213> *Neisseria gonorrhoeae*

 <400> 10
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 <210> 11
 <211> 36
 <212> DNA
 <213> *Neisseria meningitidis* Class I

 <400> 11
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<210> 12
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 <213> Neisseria meningitidis Class I

 <400> 12
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 ccggcgcgtc tctcacggcg aatggcccgg c 31

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 <400> 14
 gggcctggat ccgagtggcc gtggaaaatc acttaccgc 39

 <210> 15
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 <213> Neisseria gonorrhoeae

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 <210> 16
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 <213> Neisseria gonorrhoeae

 <400> 16
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 <400> 17
 gcataattcg tgtcgctcaa ggcgc 25

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<400> 18
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<211> 37
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<400> 19
gcggccgcca tggaagcaat ccaaaaaggt ttcaccc 37

<210> 20
<211> 33
<212> DNA
<213> Neisseria meningitidis Class II

<400> 20
gccgcgcgtc tccgaaccgg agttttgttt gcc 33

<210> 21
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<212> DNA
<213> Neisseria gonorrhoeae

<400> 21
ccgggccgctc tcggttcggt aaaatgggtc tgc 33

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<211> 30
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<213> Neisseria gonorrhoeae

<400> 22
gggcctggat ccgtgggaaa tcacttaccg 30

<210> 23
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<212> DNA
<213> Neisseria meningitidis Class II

<400> 23
gcggccggat ccggtcattg tccttatttg gtgcggc 37

<210> 24
<211> 22
<212> PRT
<213> Neisseria gonorrhoeae

<400> 24

Glu Ala Ile Leu Leu Ala Glu Gly Gln Lys Ser Ala Val Thr Glu Tyr
1 5 10 15

Tyr Leu Asn His Gly Lys

